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Life:Powered
Raising America's Energy IQ

September 30, 2021

Tom Gleason, Executive Director
Public Utilities Commission of Texas

Dear Director Gleason,

I'm writing to respectfully request your consideration for an appointment to the Texas Energy Reliability Council (TERC).

After experiencing the tragic events in February and engaging in the development of Senate Bill 3, I was inspired to apply for a TERC appointment in order to more directly serve the people of Texas and to develop innovative ways to ensure affordable and reliable energy for all Texans.

As policy director for Life:Powered, the energy initiative of the Texas Public Policy Foundation, I successfully shepherded nearly all of our legislative priorities through the session and remain actively engaged with elected and appointed officials on the market reform process. TPPF played a principal role in championing market reform and reliability standards that were part of SB 3 and will be a key part of the council's charges.

My doctoral thesis and much of my work experience prior to joining TPPF was focused on utility-scale energy storage, which is a key skill set that I can bring to the council. Understanding what energy storage can and cannot do to improve electric reliability and intermittent resource integration will be a critical part of the council's work.

Furthermore, while the current appointees to the board represent a diverse mix of energy and electricity market participants, there is not yet an appointee that represents the voice of small consumers and everyday Texas. It is my firm belief that electricity markets should be designed to serve the people of Texas and should not favor certain consumers or market participants. I know the Commission shares this belief, and I am confident I can represent the Commission well as one of its appointees.

I believe my energy policy experience, coupled with my scientific background, give me a unique perspective that will add value to the work of the council. I appreciate your thoughtful consideration of this application.

Sincerely,

Brent Bennett, Ph.D.
Policy Director, Life:Powered
Texas Public Policy Foundation

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Raising America's Energy IQ

September 30, 2021

Tom Gleason, Executive Director
Public Utilities Commission of Texas

Dear Director Gleason,

In my capacity as a Senior Advisor to the Life:Powered project, I am writing to you on behalf of Brent Bennett, Ph.D. in regards his interest in serving on the Texas Energy Reliability Council.

I've worked with Brent for three years now in conjunction with the Life:Powered – an initiative to increase America's energy IQ through substantive research, thoughtful commentary, and innovative education and communication.

In many ways, Brent is ideal for the position. He earned his Ph.D. in Materials Science in 2015 from the University of Texas at Austin where he studied advanced battery storage technology. He also accurately predicted Texas's electricity shortages due to our regulatory and policy failures. He's both a firm believer in free markets and understands the prospects and challenges of incorporating increasing amounts of renewable energy into our grid.

Additionally, he grew up in the oil and gas industry in the Midland area, and so understands how critical a reliable electricity supply is to this vital Texas industry and vice-versa.

Brent has also been active in civic life, serving as board chairman of the Austin Chapter of Young Catholic Professionals.

He would be honored and proud to serve the Lone Star State on this important council. Thank you for your consideration.

Michael J. Nasi
Senior Advisor, Life:Powered Project

# Brenton E. Bennett

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## EDUCATION

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|---|---|---|
| **The University of Texas at Austin** | Ph.D.: Materials Science and Engineering | December 2015 |
| | M.S.E.: Materials Science and Engineering, GPA - 3.54 | December 2011 |
| **The University of Tulsa** | B.S.: Physics, GPA - 3.92 | May 2009 |

**Areas of expertise –** Energy and policy research, advocating for market-based solutions to energy challenges
Energy storage market research and application development
Battery development and testing – lead acid, flow batteries, Li-ion, and fuel cells
Scientific programming for systems modeling and financial analysis

## INDUSTRY EXPERIENCE

**Policy Director –** *Life:Powered* — August 2018 – Present

- Life:Powered is an initiative of the Texas Public Policy Foundation to raise America's energy IQ and to advocate for energy policies that advance economic freedom and the human condition.
- My responsibilities include directing the team's research, content creation, and policy formation and fact-checking everything that the team publishes. A large portion of the job involves interfacing with legislators and their staffs on policy proposals and messaging. I also regularly speak at policy and industry conferences and other public events about a wide variety of energy topics.

**Consulting Engineer –** *PWRJoule* — July 2018 – December 2020

- PWRJoule is an early-stage company that is developing a micro-particle flow battery for large-scale energy storage applications. I helped the company's founders prove the technology for initial patent filings, assess the technology and market landscape, and bring on new partners.

**Researcher –** *Dimensional Fund Advisors* — March 2017 – June 2018

- My team at Dimensional was tasked with creating the world's best investment products, using sound academic research to produce exceptional long-term returns. In addition to our research, we assisted the client-service teams with educating clients about Dimensional's investment philosophies.
- I contributed to these efforts with in-depth research projects in the areas of retirement planning, corporate bonds, and mutual fund risk and return. My best accomplishments were developing a model to calculate probabilities of default for corporate bonds - part of a larger effort to create high yield bond products - and managing our process for answering questions from our client teams.

**Application Development Engineer –** *Black Diamond Structures* — January 2016 – May 2016

- My team assisted customers around the world with the implementation of discrete carbon nanotubes in lead acid batteries in applications ranging from automotive to stationary energy storage. We also coordinated internal product development to meet customer needs and identify high value applications.
- In my time with the company, I delivered a conference presentation to the largest lead acid battery producers in India, assisted with launching our India sales team, and contributed to product development with our North American and European customers.

## RESEARCH EXPERIENCE

**PhD** – *Dr. Allen Bard*; The University of Texas at Austin — June 2012 – December 2015

- I developed novel chemistries for redox flow batteries as part of a three-person team, focusing on a system using nitrobenzene as a negative electrode and a solvent and bromine as a positive electrode. The project began with fundamental electrochemistry – characterizing reaction mechanisms and supporting electrolytes – followed by scale-up using bulk electrolysis and prototype flow cells.

**Masters** – *Dr. Jeremy Meyers*; The University of Texas at Austin — June 2010 – June 2012

- I developed a MATLAB code to model mass transport and electrochemical phenomena in a direct methanol fuel cell and to study the tradeoffs between fuel efficiency, power output and system size.

## SELECTED PUBLICATIONS

- B. Bennett. "Improving the Reliability of Wind and Solar Generation in ERCOT through a Firming Requirement." Texas Public Policy Foundation (in progress). — October 2021
- B. Bennett. "U.S. Cities Had Clean Air Before COVID-19: Reducing Emissions Will Barely Move the Needle." Texas Public Policy Foundation (2020). https://files.texaspolicy.com/uploads/2020/06/11133205/Bennett-Clean-Air-Before-COVID-19.pdf. — June 2020
- B. Bennett. "Green New Deal Puts Texans in the Red." Texas Public Policy Foundation (2019). https://lifepowered.org/wp-content/uploads/2019/10/2019-08-PP-LP-Bennett-Green-New-Deal.pdf. — October 2019
- J. Chang, B. Bennett, and A.J. Bard. "Detection of an unstable intermediate in Br-/Br3- electro-oxidation on a platinum electrode in nitrobenzene by scanning electrochemical microscopy." Electrochimica Acta 238 (2017) 74-80. https://doi.org/10.1016/j.electacta.2017.04.001. — June 2017
- B. Bennett, J. Chang, and A.J. Bard. "Mechanism of the Br-/Br2 redox reaction on platinum and glassy carbon electrodes in nitrobenzene by cyclic voltammetry." Electrochimica Acta 219 (2016) 1-9. https://doi.org/10.1016/j.electacta.2016.09.129. — November 2016

## SELECTED PRESENTATIONS

- B. Bennett. "The Texas Winter Storm and the Challenge of Renewable Integration." *American Legislative Exchange Council* (July 29, 2021). — July 2021
- B. Bennett. "The Texas Winter Storm and the Challenge of Renewable Integration." *The Energy Council* (June 18, 2021). — June 2021
- B. Bennett. "Why We Need Reliable Generation: A Problem of Technology AND Scale." *U.S. Department of Energy Western States Coal Strategy Forum* (November 21, 2019). — November 2019
- B. Bennett, N. Sugumaran, and D. Kefalos. "MOLECULAR REBAR® Increases Cycle Life of Batteries in Deep Cycle Applications." *National Workshop on Lead Batteries in Solar Energy and Electric Vehicles - Challenges and Opportunities* (March 10, 2016). — March 2016
- B. Bennett, J. Chang, N. Arroyo Curras, and A. J. Bard. "Redox Flow Batteries: How Cutting-Edge Chemistry Will Transform the Electric Grid." *UT Energy Symposium* (April 24, 2014). — April 2014

## LEADERSHIP EXPERIENCE

**Board of Directors –** *Young Catholic Professionals* — January 2018 – Present
- Helped found the Austin chapter and an emerging leaders program for young adult Catholics
- Serving as board chairman, leading efforts to recruit new chapter leaders and board members during and after the pandemic shutdowns

**Board of Directors** – *Park West Homeowners Association* — March 2017 – September 2019
- Oversaw a budget of over $200k that provides for maintenance of common property, utilities, and services for a 40+ unit condominium building
- Directed an overhaul of the community's security system

**Board of Directors –** *University Catholic Center (UT Austin)* — August 2010 – October 2018
- Organized weekly events for Catholic graduate students, doubled the group membership
- Assisted in interviewing and hiring candidates for campus minister and development director
- Led efforts to create student and adult leadership boards